



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,132	12/16/2003	Tenny Sik-Keun Ho	THAB/03	5744
29140	7590	12/28/2006	EXAMINER	
DAVID W. WONG			FRISBY, KESHA	
46 WILLOWBROOK ROAD			ART UNIT	
THORNHILL, ON L3T 4W9			PAPER NUMBER	
CANADA			3714	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/28/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

88

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/737,132	HO, TENNY SIK-KEUN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kesha Frisby	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Status of Claims*

***After the amendment filed on 10/9/2006, claims 1 & 2 were cancelled and claims 3-8 are pending in this application.***

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al. (U.S. Publication Number 2002/0197589) in view of Henderson (U.S. Patent Number 6,715,614).**

Referring to claim 3, Wood et al. discloses an abacus having a plurality of counter beads slidably mounted on a guide bar (Fig. 1), motion sensors located below said counter beads and operative for detecting movements of said counter beads and generating a series of electrical signals representing movement sequence of said counter beads in carrying out said mathematical calculation (paragraph 0025: processor is within housing 29 so the examiner determines that the sensors are also), electrical control and conversion circuit means connected to said motion sensors and in combination with a microprocessor operative to convert said series of electrical signals to digital data signals (Figs. 5(a) & 5(b) & paragraph 0030), a computer (processor 86) including a display monitor (display device 87) and adapted to receive and process said

digital data signals for displaying an image of said abacus (the manipulation of the set of movable objects being moved). *Wood et al. does not disclose an abacus having a plurality of counter beads slidably mounted on a plurality of guide bars, said counter beads being operative slidably relative to said guide bars for carrying out said mathematical calculation and a computer including a display monitor that displays sequential movements of said counter beads during operation of said abacus for said mathematical calculation.* Henderson teaches an abacus having a plurality of counter beads slidably mounted on a plurality of guide bars, said counter beads being operative slidably relative to said guide bars for carrying out said mathematical calculation (Figures) and a computer (abstract: an electronic abacus calculator) including a display monitor (abstract: electronic abacus display screen) that displays sequential movements of said counter beads during operation of said abacus for said mathematical calculation (column 4 lines 36-44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a computer with a display monitor that displays sequential movements, as disclosed by Henderson, incorporated into Wood et al. in order to illustrate each abacus step needed to implement a mathematical operation.

3. **Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al./Henderson and further in view of Chizuko (JP2127712: the English translation was used) and Lee (KR 2003043898 A: the English translation was used).** Referring to claims 4-6, Wood et al./Henderson discloses a training system according to Claim 3 and wherein said sensors, said conversion circuit means and said

Art Unit: 3714

microprocessor are mounted on a components circuit board below said abacus (Figs. 2, 5(a) & 5(b) of Wood et al.), and an output port is located on said components circuit board and adapted for connection with said computer for displaying said image of said abacus in said display monitor (Fig. 2 & paragraphs 0037-0039 of Wood et al.) showing said sequential movements of said counter beads for making said mathematical calculation (column 4 lines 36-44 of Henderson). *Wood et al./Henderson does not disclose wherein said motion sensors include a light emitting portion and a light receiving portion situated opposite to one another with an air gap located therebetween, and baffle panels are mounted on said counter beads and extending downwards from each one of said counter beads to said air gap of an associated sensor located directly below said each one of said counter beads and wherein said baffle panels are normally located in said air gap of said sensors for blocking the light from said emitting portion of said sensors from implementing on said light receiving portion, and said baffle panels sequentially blocking and unblocking said light when said counter beads are operated slidably up and down said guide bars during the mathematical calculation whereby said electrical signals are generated by said sensors in cooperation with said conversion circuit means and said microprocessor.* However, Chizuko teaches wherein said motion sensors include a light emitting portion and a light receiving portion situated opposite to one another with an air gap located therebetween (abstract and Figure). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein said sensors include a light emitting portion and a light receiving portion, as disclosed by Chizuko, incorporated into Wood et al./Lee in order to provide

Art Unit: 3714

light-sensitive sensors at the positions where the abacus beads are stopped. *Wood et al./Henderson/Chizuko does not teach baffle panels are mounted on said counter beads and extending downwards from each one of said counter beads to said air gap of an associated sensor located directly below said each one of said counter beads and wherein said baffle panels are normally located in said air gap of said sensors for blocking the light from said emitting portion of said sensors from implementing on said light receiving portion, and said baffle panels sequentially blocking and unblocking said light when said counter beads are operated slidably up and down said guide bars during the mathematical calculation whereby said electrical signals are generated by said sensors in cooperation with said conversion circuit means and said microprocessor.*

However, Lee teaches said baffle members are baffle panels mounted on said counter beads and extending from each counter bead to said air gap of an associated sensor located directly below said each counter bead (Abstract: Novelty and Detail Description of Lee) and wherein said baffle panels are normally located in said air gap of said sensors for blocking the light from said emitting portion of said sensors from implementing on said light receiving portion, and said baffle panels sequentially blocking and unblocking said light when said counter beads are operated slidably up and down said guide bars during the mathematical calculation whereby said electrical signals are generated by said sensors in cooperation with said conversion circuit means and said microprocessor (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include baffle members, as disclosed by Lee,

incorporated into Wood et al./Henderson/Chizuko in order to detect the movement of the beads.

Referring to claim 7, Wood et al./Henderson, as modified by Chizuko and Lee, teaches including recording means in said computer adapted for recording said digital signals whereby the operation of the abacus by the student for carrying out said mathematical calculation is retrievable by an instructor to review the operation of the abacus step by step by the student (column 4 lines 36-44 of Henderson).

Referring to claim 8, Wood et al./Henderson, as modified by Chizuko and Lee, teaches wherein said display monitor simultaneously shows pictorial representation of both images of an instructor's abacus and the student's abacus for the student to operate the student's abacus by following the operation of the instructor's abacus by the instructor for carrying out said mathematical calculation in a correct sequence of operating said counter beads (column 6 lines 18-30 of Henderson).

### ***Response to Arguments***

4. The examiner accepts the amendments to the Specification filed 10/9/2006.
5. Applicant's arguments with respect to claims 3-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kesha Frisby whose telephone number is 571-272-8774. The examiner can normally be reached on Mon. - Wed. 7-3pm & Thurs. - Fri. 7-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Olszewski can be reached on 571-272-6678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 3714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kyf

Kyf 12/18/2006

*Kathleen Mosser*  
KATHLEEN MOSSER  
PRIMARY EXAMINER